

Kenichiroh HASHIMOTO, S.N. 10/549,788  
Page 12

Dkt. 2271/75146

REMARKS

The application has been reviewed in light of the Office Action dated August 28, 2007. Claims 1-21 are pending. By this Amendment, claims 1, 2, 4, 5, 7, 8, 10, 13 and 18-21 have been amended to clarify the claimed subject matter, without narrowing a scope of the claims. Accordingly, claims 1-21 are presented for reconsideration, with claims 1, 4, 7, 10, 13, 15 and 18-21 being in independent form.

The abstract was objected to as purportedly having informalities. More specifically, the Office Action indicated that there is an extraneous "5" in the abstract.

However, it is respectfully pointed out that the "5" on page 80 of the specification which contains the abstract represents line numbering, and therefore no amendment is needed.

Withdrawal of the objection to the abstract is respectfully requested.

The title was objected to as purportedly not sufficiently descriptive. Claims 7-12 were objected to as having informalities.

In response, the title has been amended to be more descriptive, and the claims have been amended with particular attention to the points raised in the Office Action.

Withdrawal of the objection to the title and the objection to the claims is respectfully requested.

Claims 1-9 and 13-21 were rejected under 35 U.S.C. § 102(b) as purportedly anticipated by U.S. Patent No. 6,464,342 to Kubota et al.

Applicant has carefully considered the Examiner's comments and the cited art, and respectfully submits that independent claims 1, 4, 7, 13, 15 and 18-21 are patentable over the cited art, for at least the following reasons.

The present application relates to a liquid ejection head including (a) a device substrate

Kenichiroh HASHIMOTO, S.N. 10/549,788  
Page 13

Dkt. 2271/75146

provided with a heating body for forming a bubble in the liquid filled in a flow passage and (b) a movable member provided on the device substrate in a state such that a first end thereof is fixed upon the device substrate and a free end at an opposite end of the movable member is in a freely movable state. Each of independent claims 1, 4, 7, 13, 15 and 18-21 of the present application addresses these features, as well as additional features. For example, in one aspect, the movable member comprises lamination of a plurality of layers, and an end surface of at least one layer of the movable member is covered, at the free end, by another layer of the plural layers (independent claims 1, 4, 7, 13 and 18-21). In another aspect, the movable member has an initial bending in a direction opposite to the heating body (independent claim 15 and claims 3, 6, 9, 12 and 14).

Kubota, as understood by applicant, proposes a liquid discharge head comprising a substrate equipped with a heat generator for producing a bubble in the liquid that is filled in a liquid flow channel, and a movable member supported and fixed onto the substrate at a position of the substrate opposed to the heat generator and with a gap from the substrate, with a free end on the discharge opening side.

Kubota, column 15, lines 7-19, which was cited in the Office Action, states follows:

While the SiN film 203 is constructed of five layers in the above example, it should be understood that the SiN film may not be necessarily a five-layer structure in order to obtain such effect.

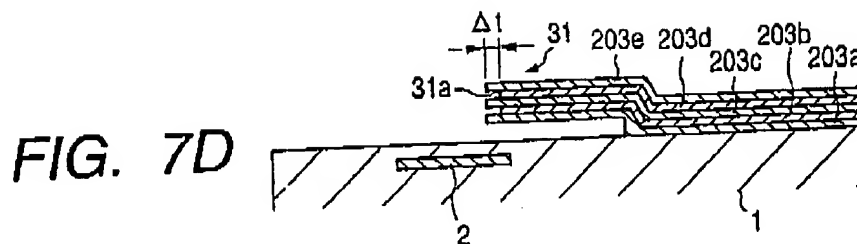
For example, between two-layered SiN film layers, there is provided at least a three-layered structure which is made by the SiO<sub>2</sub> film layer formed with different Young's modulus from those SiN films, or the like, or it should be good enough if only the structure is formed in lamination of three layers or more each having different Young's modulus from the adjacent area. In this case, the SiN film is formed in a thickness of approximately 5  $\mu$ m.

Thus, Kubota proposes that the movable member can be configured as a multi-layer film 203 (203a-203e), as shown in Fig. 7D of Kubota (also cited in the Office Action and reproduced

Kenichiroh HASHIMOTO, S.N. 10/549,788  
Page 14

Dkt. 2271/75146

below):



On the other hand, as shown in Fig. 7D reproduced above, the outer peripheral portion 31a, in a free end, of the movable member is configured in a form of a saw teeth.

However, the cited art does not disclose or suggest that the movable member comprises lamination of a plurality of layers, and an end surface of at least one layer of the movable member is covered, at the free end, by another layer of the plural layers, as provided by the subject matter of independent claim 1 of the present application. Independent claims 4, 7, 13 and 18-21 are patentably distinct from the cited art for at least similar reasons.

Accordingly, for at least the above-stated reasons, Applicant respectfully submits that independent claims 1, 4, 7, 13 and 18-21, and the claims depending therefrom, are patentable over the cited art.

In addition, Applicant does not find disclosure or suggestion in the cited art that the movable member has an initial bending in a direction opposite to the heating body, as provided by the subject matter of independent claim 15 of the present application. Claims 3, 6, 9, 12 and 14 are patentably distinct from the cited art for at least similar reasons.

The Office Action indicates that claims 10-12 would be allowable if rewritten to overcome the formal objections. By this Amendment, claim 10 has been amended to correct the informality therein, in the manner suggested in the Office Action.

Kenichiroh HASHIMOTO, S.N. 10/549,788  
Page 15

Dkt. 2271/75146

Applicant appreciates the Examiner's statement in the Office Action of reasons for the indication of allowable subject matter and submits that the claims recite subject matter which further supports patentability for reasons in addition to those identified in the Examiner's statement in the Office Action of allowable subject matter.

In view of the amendments to the claims and remarks hereinabove, Applicant submits that the application is now in condition for allowance. Accordingly, Applicant earnestly solicits the allowance of the application.

If a petition for an extension of time is required to make this response timely, this paper should be considered to be such a petition. The Patent Office is hereby authorized to charge any fees that are required in connection with this amendment and to credit any overpayment to our Deposit Account No. 03-3125.

If a telephone interview could advance the prosecution of this application, the Examiner is respectfully requested to call the undersigned attorney.

Respectfully submitted,



Paul Teng, Reg. No. 40,837  
Attorney for Applicant  
Cooper & Dunham LLP  
Tel.: (212) 278-0400